In the Claims

This listing of claims will replace all prior versions and listings of claims in the application:

Claims 1 to 9. (Cancelled)

1   10.   (Previously Presented) A method for generating digital filter
2   coefficients for tuning a hearing aid employing digital audio
3   processing to enhance hearing ability of an individual comprising:
4   fitting said hearing aid to said individual;
5   connecting said hearing aid to a source of audio digital
6   signals;
7   providing said individual with a device to generate indication
8   signals at will;
9   generating and providing a first series of audio digital
10 signals to said hearing aid, each digital signal in said first
11 series of signals corresponding to an analog audio signal having a
12 selected frequency and multiple power levels;
13   at said hearing aid converting each of said series of digital
14 signals into said corresponding analog audio signal;
15   receiving said indication signal during said generation of a
16 signal of a selected frequency indicative of said individual
17 hearing said selected frequency;
18   providing a digital audio processing unit in said hearing aid
19 for processing received audio digital signals corresponding to
20 analog audio signals and providing processed audio digital data,
21 including applying digital audio filters for tuning said hearing
22 aid characterized by generating digital filter coefficients in
23 algorithms applied to said received audio digital signals to effect
24 said digital audio filters;
25   providing a digital computer connected to receive said first
26 series of audio digital signals and said indication signals to

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27 generate digital data representative of said individual's hearing
28 ability using said hearing aid without filters determined from said
29 first series of digital signals, said computer programmed to
30 determine said digital filter coefficients for digital filters for
31 tuning said hearing aid and providing said coefficients to said
32 digital audio processing unit in said hearing aid.

1   11. (Currently Amended) A method according to Claim 10, wherein
2   said digital computer is programmed to determine said digital
3   filter coefficients by
4   providing second digital data for a tolerance range for a
5   target response curve ability of representative of said
6   individual's enhanced hearing ability of sound level versus
7   frequency;
8   providing first digital data representative of an initial
9   response curve of said individual's hearing ability of sound level
10 versus frequency;
11   comparing said second digital data to said first digital data
12 and determining whether said response curve is within said
13 tolerance range; and
14   if said response curve is not within said tolerance range,
15   iteratively generating digital filter coefficients
16   controlling center frequency, filter bandwidth and amplitude
17   for a succession of additional digital audio filters,
18   applying digital audio filters determined by said digital
19   filter coefficients to said first digital data to generate
20   third digital data for a compensated response curve, and
21   automatically optimizing said digital filter coefficients
22   by optimizing the center frequency, amplitude and filter
23   bandwidth of said digital audio filters until said compensated
24   response curve is within said tolerance range or a

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25   predetermined limit on the number of digital audio filters has
26   been reached, whichever occurs first.

Claims 12 and 13.   (Cancelled)

1   14.   (Previously Presented) An apparatus for generating digital
2   filter coefficients for tuning a hearing aid digital audio
3   processing for use by an individual, comprising:
4   a source of first audio digital data corresponding to analog
5   audio signals having a selected frequency and multiple power
6   levels;
7   a digital audio processing unit in said hearing aid for
8   processing said first audio digital data according to at least one
9   digital filter having digital filter coefficients controlling
10   filter center frequency, amplitude and filter bandwidth and
11   providing processed audio digital data, including applying digital
12   audio filters for tuning said hearing aid characterized by
13   coefficients in algorithms applied to said first audio digital data
14   to effect said digital audio filters;
15   a digital to analog converter receiving said processed digital
16   data from said digital audio processing unit and converting said
17   processed digital data into a corresponding analog audio signal;
18   a speaker receiving said analog audio signal from said digital
19   to analog converter and producing corresponding sound to the
20   individual;
21   a device for generating indication signals indicative of said
22   individual receiving said sound; and
23   a digital computer connected to receive said first audio
24   digital data and said indication signals, said digital computer
25   programmed to determine said digital filter coefficients for
26   digital filters for tuning said hearing aid and provide said
27   coefficients to said digital audio processing unit.

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1 15. (Previously Presented) An apparatus according to Claim 14,
2 wherein said digital computer is programmed to generate second
3 digital data representative of said individual hearing ability when
4 using said hearing aid without filters determined from said first
5 audio digital data and said indication signals and to determine
6 said coefficients by

7   providing third digital data for a tolerance range for a
8 target response curve of enhanced hearing of sound level versus
9 frequency;

10   providing said second digital data, wherein said second
11 digital data represents an initial response curve of hearing
12 ability of sound level versus frequency;

13   comparing said third digital data to said second digital data
14 and determining whether said initial response curve is within said
15 tolerance range; and

16   if said initial response curve is not within said tolerance
17 range,

18   iteratively generating digital filter coefficients
19   controlling center frequency, filter bandwidth and amplitude
20   for a succession of additional digital audio filters,

21   applying digital audio filters determined by said digital
22   filter coefficients to said second digital data to generate
23   fourth digital data for a compensated response curve, and

24   automatically optimizing said digital filter coefficients
25   by optimizing the center frequency, amplitude and filter
26   bandwidth of said digital audio filters until said compensated
27   response curve is within said tolerance range or a
28   predetermined limit on the number of digital audio filters has
29   been reached, whichever occurs first.

Claims 16 to 20.   (Cancelled)

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